DEC/86

ZX-Appeal

$1.50

vancouver sinclair users group

next meeting:

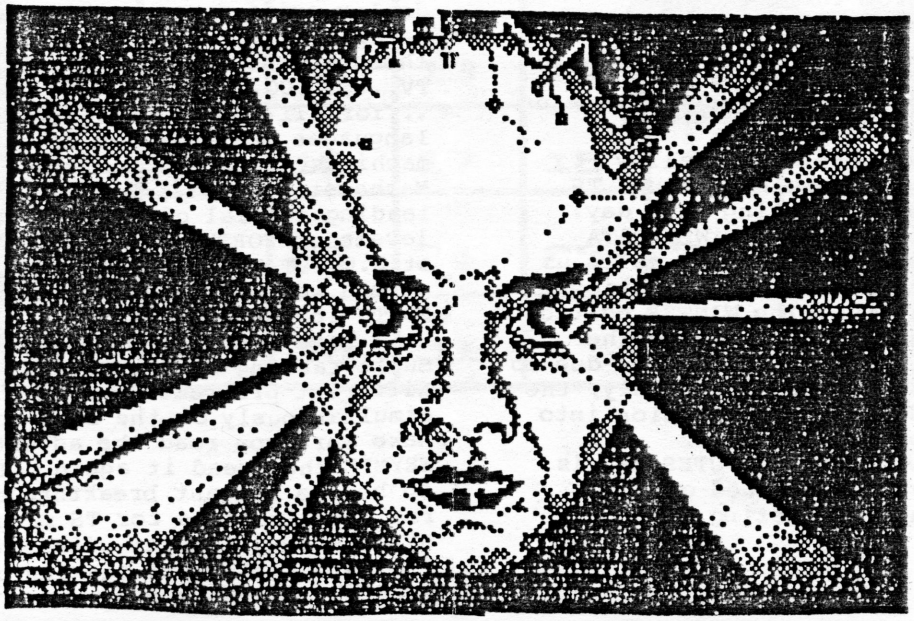
KILLARNY COMMUNITY CENTRE
6260 KILLARNY STREET
VANCOUVER

FRIDAY
DECEMBER 12, 1986
7 P.M.

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the club and ZXAppeal see the backcover.

inside

THIS ISSUE..... 2
BITS & PIECES..... 2
MEETING CALENDAR..... 3
HELP!..... 4
1000 PROGRAM..... 4
CATALOGS..... 4
BYTE POWER..... 5
COMPUTERESE..... 6
GERD CORRECTS..... 8
WEYMIL..... 9
PLAYING WITH ELECTRICITY.....10
PROGRAM LANGUAGES.....12
LOOK WHO.....13
1000 PROGRAM.....13
CLOCKING the 2068.....14
BASICALLY "IN".....14
SINCLAIR BBS'.....15



THIS ISSUE.....

Ho Ho Ho...its that time of year again. When we start leaving mail-order catalogs lying around with certain pieces of software and hardware highlighted...just in case anyone is interested. In this issue I'm including the addresses of some catalogs that arrived at my door by random this month. The number of new products recently brought on the market for Sinclair and related machine is impressive. Back with us in this issue are two contributors well known to loyal reader: Harvey T. gives us another chapter of his ongoing saga for the QL of 'Playing With Electricity'; Ken A. supplies a couple of neat little programs 'sure to baffle and amuse one and all'. Hugh P. writes from Cowtown with a problem I'm sure one of you will let him know the answer to. Take special note of our advertisers this month. BYTEPOWER presents themselves again for you for your consideration. I've read that this product is well worth the money. Weymil has finally come up with the impossible...a program that allows MULTI-TASKING on a 1000 (ZX81). I saw it - otherwise I wouldn't believe it. We round out this month's ZXAppeal with assorted odds and ends as well as the usual select articles from the NETWORK.

BITS & PIECES.....

...sad news this month fellow Sinclairions, another valued TS publication is calling it a day. QUARTERS, published by WMJ DATA SYSTEMS four times a year tells us in the just arrived FALL edition that the forthcoming WINTER edition will be the last. Bill says the cause was less available time due to an increase in business. Sadly, the jump was due to his expansion into 'other' computer lines.

...the new CANADA COMPUTES mag is here and will be handed out to everyone at the meeting.

...the Pacific Coast Computer Fair Association's swap meet was a roaring success. Our Group put on a most impressive display of three generations of Sinclair machines...the 1000, the 2068, and Harvey's QL. Many old newsletters were passed out and much interest was shown by the public. There was a crowd in front of the booth almost all day. A few machines even changed hands. A little old lady came up to us with a box containing 5 1000's for sale. Harry S. would have taken the lot if I hadn't grabbed one for myself. Many thanks to: Wilf, Glenn, Harvey, Ken, Gerd, Harry, John, and me for manning the tables.

...last month we warned gentle reader that if,as a result of a hardware article in the newsletter, smoke was observed coming from whence it shouldn't, thats the way she goes. I decided to wire in the Tantalum cap in the Reset button article for the 2068 in backwards. Just as a test of the TIMEX repair system, you understand. Now we'll see how long TIMEX takes repairing my machine.

...the QL Kit group purchase is moving ahead with increased speed. Doug Dewey called from Carrboro, NC, the other day to say that the price lists and other info will be going out to the 15 individuals in our area who signed up. Doug said that the total number of kits ordered topped 60. This qualified us for dealer pricing on certain items that he will detail in his letter to those on the list. Eg:..flat screen TV...$50.00.

...for all those interested in other languages that can run on our machines, Jack Brown of the Mathemetics Dept., B.C.I.T., will be leading several classes on various levels of FORTH starting in January at B.C.I.T. for 12 weeks. Mr. Brown gave a very interesting tutorial on FORTH at the swap meet.

...I have seen the promised land!!! Multi-tasking on a 1000! 3 different programs running simultaneously on the same screen!! Make sure you read the advert from WEYMIL then read it again. This has to be the biggest breakthrough in real applications for TS machines since Harvey came up with MINI-XMOD. I'm told that multi-tasking on the 2068 is only days away.

RENEWING MEMBERS:

B.Holden, N.Trylsson, B.Hoffert
G.Winterburn, C.H.Key, B.G.Watts,
K.Gamey, H.Polley.

NEW MEMBERS:

Vince Lee, Vancouver, B.C.
Ken Duda, Northlake, Illinois

If you received notice that your dues are due, please pay at the next meeting or remit by mail. The club can only remain in existence so long as interest remains.

Has anyone seen the Club 1000? Sometime back, the Club TS1000 and Rampak were loaned to a member and now the lender can't remember who the lendee was. If you have it or know who has, please bring it to the next meeting. We intend to raffle it off, proceeds to the club treasury.

Speaking of raffles...what do you think of the Club buying a QL Kit and raffleing it off to the membership at, say, two bucks a ticket? As long as a minimum number of tickets were sold to cover the cost, someone would come up with a QL real cheap and the Club might make a few extra bucks. Let's have your input at the meeting.

****

DECEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

HELPHELPHELPHELPHELPHELPHELPHELPHELP

HUGH POLLEY writes:

I have a radio shack M100 and would like to use it with my TS 2068 but I have some problems with MTERMII.

1/ I have MTERMII, Rotronics Wafadrive, and modem. After loading MTERMII should I try to return to basic the system crashes.

2/ I would like to be able to transfer a basic program from the TS to the MTERMII text file.

3/ I would like to be able to transfer a program written in ascII formatt to sinclair basic and vic versa one line at a time inorder to make required changes.

INFO:
The system uses a spectrum rom, and the operating system lies between 23734 and 26026 plus channel buffers.

I would like to hear from anyone with partial or total solutions to any of the above problems.

HUGH A. POLLEY
183 MARANDA CL.
CALGARY,ALTA.
T2T 3E7

****

```
  1 REM GENERATIONS
    BY KEN ABRAMSON

 10 PRINT TAB 9;"GENERATIONS"
 20 PRINT "THIS PROGRAM SHOWS H
OW THE"
 30 PRINT "NUMBER OF PEOPLE IN
YOUR FAMILY"
 40 PRINT "WILL INCREASE OVER S
EVERAL"
 50 PRINT "GENERATIONS IF EACH
PERSON HAS"
 60 PRINT "2.33 CHILDREN (ON TH
E AVERAGE)."
 70 FOR N=1 TO 300
 80 NEXT N
 90 CLS
100 LET T=25
110 LET Y=1950
120 LET A=3
130 LET C=2.33
140 LET D=A
150 PRINT TAB 5;"YEAR";
160 PRINT ,"DESCENDENTS"
170 PRINT TAB 5;"    ","
    "
180 PRINT TAB 5;"1950 A.D.","3"
190 LET D=D*C
200 LET Y=Y+T
210 PRINT TAB 5;Y,D
220 LET D=A+D+(D*C)
230 GOTO 200
240 SAVE "GENERATIONS"
250 RUN
```

****

GOODIESGOODIESGOODIESGOODIESGOODIES

This month the mailperson has pushed 5 very tempting TS mail-order catalogs thru my door. One of these is even Canadian!

---Beaver Computer Products
756 Fleming Ave.,Winnipeg, Man,
R2K 1V5
....a WP for the 2068 they call 'Beaver Writer' plus other neat stuff. They have a great demo tape you can send for.

---WMJ DATA SYSTEMS
4 Butterfly Drive
Hauppauge, NY 11788
...business programs, games, utilities, graphics, books, and much more.

---Thomas B. Woods
P.O.Box 64,
Jefferson, NH 03583
...Pro/file, MemoNotes, Extended Basic, 8K ROM upgrade, & lots more. My orders already gone!

---Knighted Computers
707 Highland St.
Fulton, NY 13069
...all the good stuff for the 2068 and QL.

---E-Z KEY
225 Beach Street
Wollaston, MA 02170
...16 pages of goodies - most of it for the QL. A better selection I've yet to see. They have KEYTOPS for the 2068!! $4.00 gets you a set of keytops for that decent 2068 keyboard. I've already received the PCB for the keyboard interface.

Send for these catalogs. You'll be glad you did! Surprisingly, most of the items they carry are not expensive. Have you priced programs for 'Big Blue' lately?

A Phrase Book of Computerese

...Wes Brzozowski, SINCUS (Mar/Apr 86)

You've probably seen dozens of glossaries of computer terms. Newspaper articles, magazines, and even some computer manuals contain lists that will let you look up the meaning of words such as BYTE, RAM, FLOPPY DISK, etc.

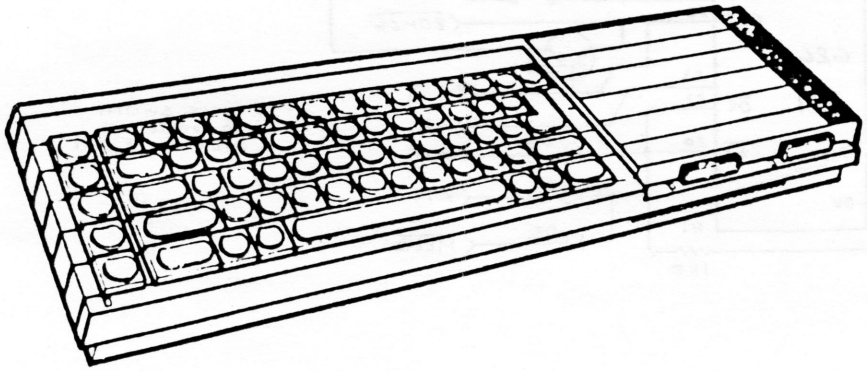
But you can't learn French by reading a French dictionary, and you can't understand computerese by scanning a glossary. Although a true understanding of a language requires practice we could really use a phrase book. You know, the kind tourists take with them when they travel. The little book they open at the restaurant in China, just to make sure they don't accidentially order a stir-fried tractor.

Here's a small list of useful computer phrases,...and what they really mean:

*They'll be available in a couple of months	--If enough people act interested we may start designing one.
*It prints near-letter quality	--The dot matrix is larger than 5 X 5.
*You won't be constantly referring to the manual	--We don't provide much documentation.
*The'll be available in a couple of months	--The competion has announced one, and we don't wont you to buy theirs.
*Ours is easier to learn	--Ours doesn't do as much.
*It's portable	--We put a handle on it.
*New low price	--We got this deal on a load of reject parts that usually work OK.
*They'll be available in a couple of months	--We're trying to hire a designer who knows what the heck he's doing.
*We've improved it	--We think it's finally debugged.
*They'll be available in a couple of months	--The prototype still doesn't work for some reason.
*It'll upgrade your system	--Now you won't crash as often.
*It's fully compatible	--We heard that someone got it working, once.

*THEY'LL BE AVAILABLE IN A COUPLE OF MONTHS	--WE FORGOT TO WRITE SOFTWARE FOR IT.
*THE OWNER INSTALLS IT	--YOU DO THE WORK AND SAVE US THE LABOUR COSTS.
*IT'S THE BEST ONE AROUND	--YOU EXPECT WE'D SAY IT ISN'T?
*THEY'LL BE AVAILABLE IN A COUPLE OF MONTHS	--WE'VE GOT TO REDESIGN IT. WE'VE BEEN FIDDLING WITH IT SO LONG THAT THEY'VE STOPPED MAKING SOME OF THE PARTS.
*IT'S WIDELY SUPPORTED BY THIRD PARTIES AND USER GROUPS	--IF YOU HAVE ANY QUESTIONS WE DON'T WANT TO HEAR THEM.
*THEY'LL BE AVAILABLE IN A COUPLE OF MONTHS	--THERE'S A SUCKER BORN EVERY MINUTE.
*IT'S COMPATIBLE WITH EARLIER MODELS	--WE TOOK THE GUTS AND PUT THEM IN A NEW BOX.
*IT'S NEW AND INNOVATIVE	--IT'S NOT COMPATIBLE WITH ANYTHING
*WE WONT BE MAKING IT AVAILABLE: THERE'S NOT ENOUGH OF A MARKET	--THE ONLY GUY WHO UNDERSTOOD THE THING LEFT US TO WORK FOR A MORE ORGANIZED OUTFIT.

AS YOU CAN SEE, THERE'S MORE TO COMPUTERESE THAN JUST WORD MEANINGS. NOTE THAT THE MEANING OF SOME PHRASES CHANGES DEPENDING ON HOW MANY TIMES THEY'RE REPEATED. WE CAN ALSO BE SURE THAT THOSE WHO ANNOUNCE SHIPPING DATES FOR COMPUTER PRODUCTS FULLY AGREE WITH EINSTEIN THAT TIME IS RELATIVE.



Good year for computers

By KEN BELL
Business Editor

LAS VEGAS — More speed and memory are the major thrusts of the microcomputer industry at this year's Comdex show.

According to Vancouver companies exhibiting here, the computer market looks headed for an excellent year.

William Lowe set the tone of this year's show by telling 80,000 dealers to "fasten their seatbelts."

He said 1987 would be the most exciting year the industry had ever seen.

Lowe, president of IBM's entry systems divisions, gave the keynote speech at Comdex.

He sent a collective wave of relief through the show by reaffirming IBM's intention to maintain an open architecture with its personal computers.

In other words, IBM does not intend to lock out hardware competitors by developing a proprietary, IBM-only, personal computer.

Much of the interest to date at this year's show has centred on the high-speed 80386 microprocessor.

Compaq set the pace by releasing the first 80386-based computer in September, but already there are imitators, including upgrade kits for IBM AT computers.

Another development unveiled at the show includes a substantial push to make the IBM PC suitable for desk-top publishing.

Large high-resolution monitors, with both color and black-and-white capabilities, are all over the place.

Many of the systems are demonstrated using laser printers that have come down in price and have improved in quality over the past year.

One other trend that business users will probably appreciate is a continued influx of clones that are bound to keep hardware prices competitively low.

Noticeable by its absence, however, is multi-user software using the Unix operating system.

Dealers looking for multi-user systems in the main had to be content with improved networking software and hardware.

Canada is well represented with two government-sponsored display areas and a number of individual corporate displays.

Walter Steel, president of Vancouver-based Sydney Development Corporation, said he was pleased at the response to the company's display.

Sydney is stressing its new communications protocol that was developed at the University of British Columbia.

Tom Flaherty, president of Bedford Software of Burnaby, said the Canadian displays, with a distinctive maple leaf theme, seemed to attract buyers.

Greg Boorman, president of Daetech Electronics of Burnaby, said orders half way through the first two days had made attendance at Comdex worthwhile.

One local disappointment at the show was for Synex Systems, whose SQZ! spreadsheet compression program made it on to the list of candidates for an outstanding technical achievement award from PC Magazine.

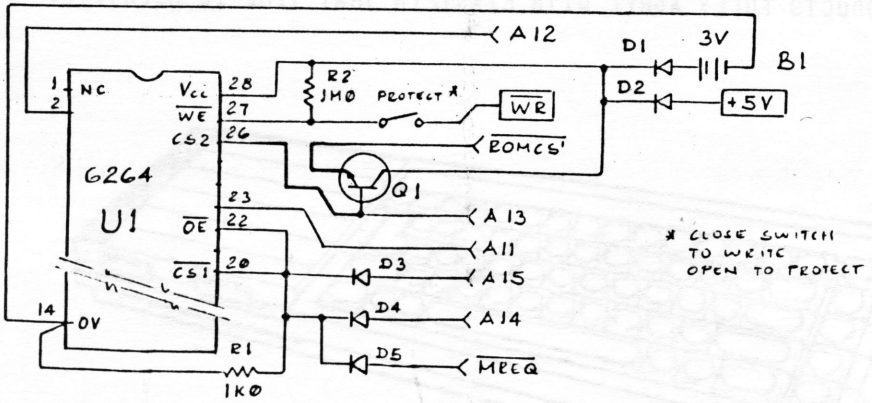
In its category of software add-ons, SQZ! was beaten by What's Best and HAL, both enhancements for Lotus 1-2-3.

Hardware awards went to Compaq for its Deskpro 386 while Zenith and Toshiba shared portable computer honors.

The award for a software application went to NewViews, billed as a new approach to accounting software.

****

Gerd says that the schematic of the one chip NVM in the Jul/Aug newsletter was slightly incorrect. He assures me that it will work as shown but feels that the slight change as shown below is more correct.



WEYMIL presents...

A small collection of truly innovative products for Sinclair computers

NEW FOR 1987 !!

MULTI-TASKING ON THE TS 1000 ?

BELIEVE IT !!!

WEYMIL continues to deliver what everyone else says is "impossible". What's the hottest feature in computers today? MULTI-TASKING ! Until now, most people thought that you had to buy an expensive 68000 machine for multi-tasking. Please allow us to introduce NOVA 1000 , the software that delivers MULTI-TASKING to the TS 1000. No gimmicks, no tricks. A full multi-tasking environment for the TS 1000 at a very affordable price. Our developers have outdone themselves on this one. Please read on.

NOVA 1000 comes complete with these powerful built-in features. An honest-to-goodness switchable real-time clock that runs concurrent with your programs ON THE SCREEN. A switchable automatic line tracer to allow you to follow the operation of your BASIC programs. Switchable auto-repeat on all keys, just the thing for creating long REM statements. There's more.

Each copy of NOVA 1000 comes complete with 3 complete versions. Version 1.0 contains the complete NOVA 1000 program in statement 0 REM to allow you to incorporate it's features in many existing programs or programs of your own design. Version 2.0 automatically locates itself to the 8 to 16K region for Hunter Board or 64K applications. Version 3.0 automatically lowers RAMTOP for 16K configurations.

Consider these possible applications of NOVA 1000. A background auto-dialer for BBS applications would allow your computer to be used for other purposes while waiting for access. The real-time display could be used to keep track of BBS time usage, great for pay boards or long distance calls. Multiple M/C programs can now be run simultaneously. The real-time clock can be used as a timer to activate or de-activate several programs at once. BASIC and M/C programs can be run together. Package M/C programs as memory-resident BATCH files. Create printer buffers for W/P applications. Transfer data between two or more on-line programs. Control multiple real-time I/O events for powerful low-cost robotics. Monitor the actual running of BASIC programs rather than just watching the results. There's still more.

NOVA 1000 is very user-friendly and well-documented in layman's language. You would expect a program with these features to be memory intensive. NOVA 1000 uses only 512 bytes! NOVA 1000 does not slow down your computer. SLOW mode programs can actually have speed increases up to 400% ! Registered users will receive FREE periodic application update sheets.

We feel confident that NOVA 1000 will redefine the standards for TS 1000 programming. Consider this offer. If you can develop imaginative programming applications utilizing NOVA 1000 , we will provide our proven marketing expertise. We will handle advertising, distribution, and customer service PLUS pay you the most competitive rates in the industry. All you have to do is create and we'll take it from there. This offer is restricted to registered users.

NOVA 1000 for the TS 1000 only $ 2 0 . 0 0

TRACER TS2068

The perfect de-bugging tool for BASIC programs. This program allows you to actually see each line of your BASIC program as it is executed. This program prints not only the line number in use, but the commands as well. It uses only the bottom of the screen for display rather than interrupting the screen display. De-bugging has never been easier.

TRACER for the TS 2068 only $ 1 5 . 0 0

SOUNDESIGN TS2068

The best sound development program we've seen for the TS 2068. This program allows you to manipulate the sound chip of the TS 2068 in ways never before imagined. The sound effects, synthesis, and music this program can create have to be heard to be believed. Along with built-in sound routines, this software allows you to develop and mix your own as well. Once you have created the sound you want, all you have to do is press a key and you get a print-out of the line of BASIC required for you to implement that sound in your favorite program. This program is not only a powerful utility for any software library, it is also just plain fun.

SOUNDESIGN for the TS 2068 only $ 1 5 . 0 0

SPECIAL OFFER!!!

Save $ 5 . 0 0 when you order the combination of THRUST, FIGHTER JOYSTICK INTERFACE, and KRUNCHER 1000 and pay only $ 6 4 . 9 5

SHIPPING INSTRUCTIONS Please enclose $ 2 . 0 0 shipping and handling with your orders.

WEYMIL CORPORATION

BOX 5 9 0 4

BELLINGHAM, WA 98227-5904

PLAYING WITH ELECTRICITY

Nov 14/86

How do you represent .5 in binary? How about .75? That is a teaser for next time.

What I want to talk about this month is getting on the QL bus, a 6821 expansion board. The 68ØØ8 addresses one megabyte directly; in hex that is Ø -> $ØFFFFF. The memory map looks roughly like this:

```
$ØFFFFF - 1M   - Top of address space
               - 128K ROM expansion
$ØDFFFF - 896K -
               - 8 - 16K Expansion cards
$ØBFFFF - 768K -
               - 512K Expansion Ram
$Ø3FFFF - 256K -
               - 128K On board ram
$Ø1FFFF - 128K -
               - I/O Hardware
$ØØFFFF - 64K  -
               - Plug in ROM
$ØØBFFF - 48K  -
               - On board ROM
$ØØØØØØ -      - Bottom of address space
```

From this brief outline you can see that we have to aim for the 768K-1M slot. If we look at the address lines in binary we see:

A19	A18	A17	A16	A15	A14	RANGE	FUNCTION
1	1	x	x	x	x	768K-1M	Hardware expansion
1	Ø	x	x	x	x	512K-768K	Ram expansion
Ø	1	x	x	x	x	256K-512K	Ram expansion

If we are to design a circuit to get into this slot we will have A19 & A18 high; while the other address lines will narrow the range in that slot. In particular, what I chose to do was use this decoding.

```
A19 A18 A17 A16 A15 A14 A13 ..... A1  AØ
1   1   1   Ø   1   1   1          R   R    which is $ØEEØØR
```

The 6821 uses the two low address lines to differentiate 4 of its internal registers. Looking at the circuit diagram, you see that lines A19 A17 go directly to the 74LS21 which has dual 4 input AND gates. A16 is first inverted by the 74LSØ5 and then goes to the 74LS21. Note that the 74LSØ5 is an open collector device & so needs a pull up resistor at its output. The output of the first AND gate is fed to the other side which also watches A15 A13.

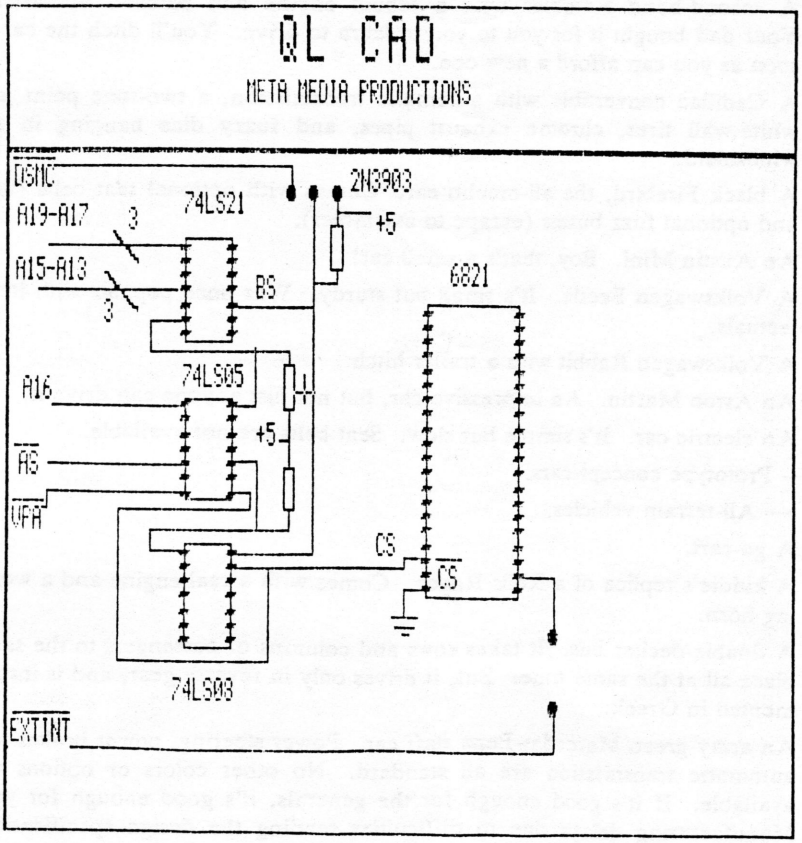
This positive signal I have called board select. One of the intricacies of the QL is that the internal hardware will grab any

address above 256K unless it is told not to via an open collector input line called confusingly Data Strobe Master Chip; DSMCL where the L indicates active low. One other restriction has to do with timing. DSMC must be driven low before Address Strobe (ASL) becomes active. On the board this is accomplished by the 2N3903 transistor which is driven by board select.

So far we have generated a board select & told the QL we are interested. The ASL signal is used to qualify board select to generate a Chip select signal for the 6821. Note that Motorola recommends that Chip Select (CSL) be qualified as well by the E signal; which I have not done. Now the 6821 knows the QL is talking to it, the board has to be able to tell the QL to continue. This is done with the Valid Peripheral Address (VPAL). Note that VPAL is an open collector line , so that no pullup resistor is used for this connection.

All of the other connections are straightforward; such as the Data lines & power grid.

This is a hardware expansion which ignores QDOS completely. There is no way for the operating system to know that this board is attached. All driving software must therefore be particularly written for the $ØEEØØR address.



Selecting a Programming Language Made Easy

Daniel Salomon & David Rosenblueth

Department of Computer Science, University of Waterloo
Waterloo, Ontario, Canada N2L 3G1

With such a large selection of programming languages it can be difficult to choose one for a particular project Reading the manuals to evaluate the languages is a time consuming process. On the other hand, most people already have a fairly good idea of how various automobiles compare. So in order to assist those trying to choose a language, we have prepared a chart that matches programming languages with comparable automobiles.

`Assembler` — A Formula I race car. Very fast, but difficult to drive and expensive to maintain.

`FORTRAN II` — A Model T Ford. Once it was king of the road.

`FORTRAN IV` — A Model A Ford.

`FORTRAN 77` — A six-cylinder Ford Fairlane with standard transmission and no seat belts.

`COBOL` — A delivery van. It's bulky and ugly, but it does the work.

`BASIC` — A second-hand Rambler with a rebuilt engine and patched upholstery. Your dad bought it for you to you to learn to drive. You'll ditch the car as soon as you can afford a new one.

`PL/I` — A Cadillac convertible with automatic transmission, a two-tone paint job, white-wall tires, chrome exhaust pipes, and fuzzy dice hanging in the windshield.

`C` — A black Firebird, the all-macho car. Comes with optional seat belts (lint) and optional fuzz buster (escape to assembler).

`ALGOL 60` — An Austin Mini. Boy, that's a small car!

`Pascal` — A Volkswagen Beetle. It's small but sturdy. Was once popular with intellectuals.

`Modula II` — A Volkswagen Rabbit with a trailer hitch.

`ALGOL 68` — An Aston Martin. An impressive car, but not just anyone can drive it.

`LISP` — An electric car. It's simple but slow. Seat belts are not available.

`PROLOG/LUCID` — Prototype concept-cars.

`Maple/MACSYMA` — All-terrain vehicles.

`FORTH` — A go-cart.

`LOGO` — A kiddie's replica of a Rolls Royce. Comes with a real engine and a working horn.

`APL` — A double-decker bus. It takes rows and columns of passengers to the same place all at the same time. But, it drives only in reverse gear, and is instrumented in Greek.

`Ada` — An army-green Mercedes-Benz staff car. Power steering, power brakes and automatic transmission are all standard. No other colors or options are available. If it's good enough for the generals, it's good enough for you. Manufacturing delays due to difficulties reading the design specifications are starting to clear up.

Speaking of Old Friends, look who popped up in a recent Sinclair/QL World....Original Member Rois.

Sinclair/QL World August 1986

It was good to receive my June *Sinclair QL World* and to find some sympathy in an article describing the loss of files due to "I/O incomplete" or "invalid Quill file" types of error messages.

With my JM VER$ QL, I have not been able to save any documents longer than about 5,650 words or 64 sectors. In your Open Channel was a letter from Ian Tait suggesting that he could store files on Microdrive up to 10,000 words in length. I am asking how that is so, in the light of my system's limitation. Could someone please explain how he can reach that great length?

Incidentally, I have a PCML 256K memory add-on and have never had any real problem with my system. I am interested in any information or letters from anyone knowing a little more about this "cute" kind of storage system.

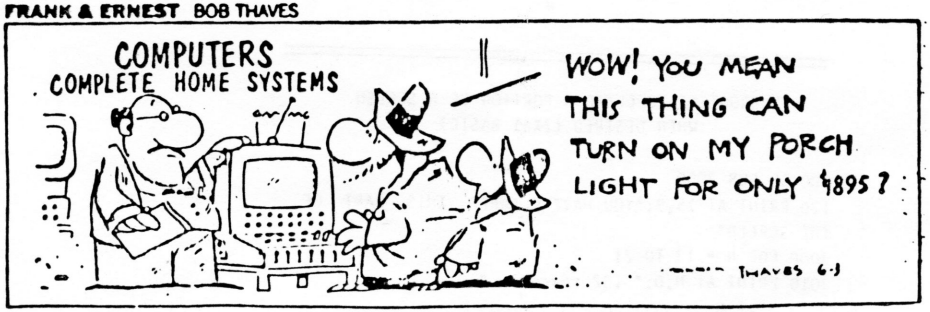
Rois Harder #15,
P O Box 491, Yanbu,
K. of Saudi Arabia.

```
  1 REM SIMPLE AVERAGING
        BY KEN ABRAMSON

 10 LET S$="******************
**************"
 20 LET B=0
 30 LET C=0
 40 PRINT TAB 12;"AVERAGES"
 50 PRINT AT 4,0;"THIS PROGRAM
WORKS OUT THE"
 60 PRINT "AVERAGE OF A SET OF
NUMBERS."
 70 PRINT AT 7,0;"AFTER TYPING
A NUMBER, PRESS"
 80 PRINT "THE ENTER KEY."
 90 PRINT AT 12,0;S$;"*AFTER AL
L NUMBERS ARE ENTERED,*"
100 PRINT "* TYPE ""A"", THEN P
RESS ENTER.   *"
110 PRINT S$
120 PRINT AT 20,0;"TOUCH ANY KE
Y TO BEGIN."
130 PAUSE 4E4
140 CLS
150 PRINT AT 20,0;"INPUT YOUR N
UMBERS NOW:"
160 INPUT A$
170 IF CODE A$=38 THEN GOTO 240
180 LET A=VAL A$
190 PRINT A
200 LET B=B+A
210 LET C=C+1
220 SCROLL
230 GOTO 160
240 LET A=B/C
250 CLS
260 PRINT S$
270 FOR Y=1 TO 9
280 PRINT AT Y,0;"*";AT Y,31;"*
"
290 NEXT Y
300 PRINT
310 PRINT AT 2,4;C;" NUMBERS EN
TERED"
320 PRINT AT 5,4;"THEIR SUM IS
";B
330 PRINT AT 8,4;"THE AVERAGE I
S ";A
340 PRINT
350 PRINT S$
360 PRINT AT 18,0;"FOR ANOTHER
SET OF NUMBERS:"
370 PRINT
380 PRINT "PRESS RUN, THEN ENTE
R."
390 STOP
400 SAVE "AVERAGES"
420 RUN
```

****

FRANK & ERNEST BOB THAVES



CLOCKING THE 2068

Our 2068's have a built-in clock, sometimes called the Frame counter. This clock starts at zero every time the computer is turned on. It increments the value at the variable address 23672 every 1/60th of a second until it reaches 255.This takes about 4 1/4 seconds and then resets to zero and increments the value at 23673. This counter will also go up to 255 but only every 18 minutes. At that time it, in turn, increments the final counter at address 23674. The final counter reaches 255 after about 3 days and 6 hours.

The counters can be reset to zero or any other value by POKEing the number into three addresses. The accuracy of the clock is .01 percent (+/- 10 seconds per day). The clock counts up as long as the 2068 is left on, with three exceptions:

- During a BEEP,
- During tape operations (SAVEing and LOADing),
- During printing on the printer.

Under the above three conditions, time will stand still and continue when the condition is completed. The following expression gives the present count on the clock:

```
(65536 * PEEK 23674 + 256 * PEEK 23673
                    + PEEK 23672) / 60
```

When using this expression in a program it is possible to PEEK 23673 just as 23672 resets to zero. This will give a false reading of 23673 because it should have been incremented at that moment, between reading the two addresses. To overcome this situation, use the above expression twice successively, and take the highest reading.

from : SPECTRUM Users manual, Chapter 18
compiled by Fred Schakel
London T/S Users Group

BASICALLY "IN"

An advantage of using the IN function instead of INKEY$ is that multiple keys can be sensed. If the keyboard was to be divided into 8 groups so that each group was half a row containing 5 keys, then these groups would be represented by IN addresses as follows:

IN 65278 = keys CAPSHIFT to V
IN 65022 = keys A to G
IN 64510 = keys Q to T
IN 63486 = keys 1 to 5
IN 61438 = keys 0 to 6
IN 57342 = keys P to Y
IN 49150 = keys ENTER to H
IN 32766 = keys SPACE to B

When IN 65278 equals 31 (binary 11111), none of the keys from CAPSHIFT to V are being pressed. If one of these keys was pressed, it would change the binary 1 to a zero. The least significant digit represents the key closest to the outside of the keyboard. For example, IN 61438 is 19 (Binary 10011) indicating that both keys 7 and 8 are pressed. Check this by RUNning this one-line program: (press keys 6 to 0)

```
10 PRINT AT 1,1: IN 61438: GOTO 10
```

This only uses the 5 least significant digits of the address. The 6th least significant digit is the bit which presently appears at the EAR socket. IN 251 handles the data for the printer as does OUT 251. OUT 254 colours our border on the 3 least significant bits while it's 4th and 5th bits are used for the MIC socket and the BEEPer respectively.

from: SPECTRUM Users Manual, Chapter 23
compiled by: Fred Schakel
London T/S Users Group.

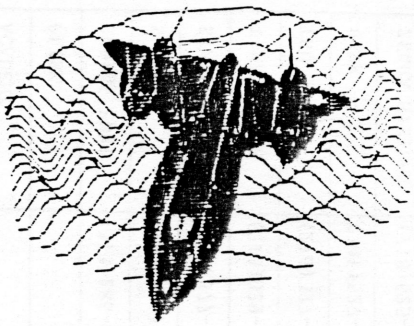
SUBROUTINE TO CLEAR A PORTION OF A SCREEN WHEN DESIRED (ZX81 BASIC)

```
100 GO SUB 3000
120 PRINT AT 15,9;"YOU HAVE CLEARED  THIS  PART  OF
THE SCREEN"
3000 FOR N = 13 TO 21
3010 PRINT AT N,0;" (32 spaces)  "
3020 NEXT N
3030 RETURN
```

List of Bulletin Boards Available to Sinclair Users

					Access by PC Pursuit	Accepts 'Stacked' Commands	300 BPS	1200 BPS	2400 BPS	No. of Message Bases	E-Mail	2068 Downloads	1000 Downloads	Total System Capacity	Total T/S Downloads	Total CP/M Downloads	
AVERAGE REMOTE	(213)325-0213	8,1,N	24Hrs		Y	N	Y	Y	N	1	Y	Y	Y	21 MB	1 MB	MB	Los Angeles, California
BILL'S OBSESSION	(404)377-2550	8,1,N	90%		Y	Y	Y	Y		2	Y	Y	N	22 MB	300 KB	2 MB	Atlanta, Georgia
COMPUSERVE	(Local No.)	7,1,0	24Hrs			N	Y	Y	Y	2	Y	Y	Y			Y	Columbus, Ohio
FWKUG	(817)540-4183	8,1,N	24Hrs		Y	Y	Y	Y	Y	0	Y	Y	N	44 MB	200 KB	25-30 MB	Ft.Worth, Texas
ISTUG	(317)898-3903	7,1,0	24Hrs		N	N	Y	N	N	1		N	N	64K	0	0	Inianapolis Indiana
LOONEY BIN!	(619)390-9470	7,1,0	24Hrs		N	N	Y	N	N	1	N			562 KB	0	0	San Diego, California
MCI MAIL	(Telenet)	8,1,N	24Hrs			N	Y	Y	Y	0	Y	N	N		0	0	Wash,D.C.
NIGHT OWL	(312)459-5721	8,1,N	24Hrs		Y	N	Y	Y	N	1	Y	Y	Y	7 MB	150 KB	0	Chicago, Illinois
OMNI-NET	(718)837-2881	8,1,N	24Hrs		N		Y			1	Y	N	N		0	0	New York
OWEGO FREE ACADEMY	(607)754-3420	8,1,N	24Hrs		N	Y	Y	Y		0	Y	Y				0	Owego, New York
PLINK			24Hrs				Y	Y	Y	1	Y	N	N		0	0	
SERIAL PORT	(313)286-0145	8,1,0	24Hrs		N	N	Y	Y	Y	1	Y	Y		15 MB	70 KB		Ann Arbor, Michigan
SOURCE	(Telenet)	7,1,0	24Hrs			N	Y	Y	Y	0	Y	N	N		0	0	McLean, Virginia
STARTEXT	(817)877-1041	8,1,N	24Hrs			N	Y	Y	N	0	Y	Y	N				Ft.Worth, Texas
TIMEXCHANGE	(213)329-3922	8,1,0	24Hrs		Y	Y	Y	Y	N	1	N	Y	Y	25 MB	900 KB	20 MB	Los Angeles, California
TSU	(216)327-1099	7,1,1	24Hrs		N	N	Y	Y	N	5	Y	Y	Y	800 KB	100 KB	0	Cleveland, Ohio
VSYS	(201)527-0535	7,1,N	*		Y	N	Y	N	N	4	N	N	N		0	0	Elizabeth, New Jersey
ZEBRA SYSTEMS	(718)625-6220	8,1,N	24Hrs		N	N	Y		N	8	Y						Woodhaven New York

MERRY CHRISTMAS AND HAPPY NEW YEAR
TO ALL



VSUG

THE VANCOUVER SINCLAIR USERS GROUP HAS BEEN IN EXISTENCE SINCE 1982. WE ARE A SUPPORT GROUP FOR THE OWNERS AND USERS OF THE: MICROACE, ZX80, ZX81, TS 1000, TS 1500, SPECTRUM, SPECTRUM +, TS 2068, AND QL COMPUTERS.

PRES.--KEN ABRAMSON
V/PRES.-- ?
TREAS. & EDITOR--ROD HUMPHREYS

OUR MEMBERSHIP DUES ARE ONLY $15.00/YEAR AND MAY BE SENT TO THE TREASURER.

ROD HUMPHREYS
2006 HIGHVIEW PLACE
PORT MOODY, B.C., V3H 1N5

MEMBERSHIP INCLUDES A SUBSCRIPTION TO ZXAPPEAL - OUR MONTHLY NEWSLETTER. ZXAPPEAL ACCEPTS ADVERTISING, OUR **PREPAID** RATES ARE:

$20.00 -- FULL PAGE
$12.00 -- 1/2 PAGE
$8.00 -- 1/4 PAGE

ZXAPPEAL HAS A PRINT RUN OF 75 COPIES PER MONTH FOR MEMBERS AND IS ALSO DISTRIBUTED TO APPROX 40 OTHER SINCLAIR USER GROUPS THROUGHOUT NORTH AMERICA AS WELL AS OVERSEAS VIA THE NETWORK.

NETWORK CORRESPONDENCE MAY BE DIRECTED TO THE EDITOR AT THE ABOVE ADDRESS.